

CLAIMS

1. A method for creating photo-quality image with an ink-jet ink comprising:

(a) providing an inorganic porous media substrate;

5 (b) providing an aqueous ink-jet ink comprising an ink vehicle and an effective amount of a metallized dye having at least one heterocyclic nitrogen ring and an azo bond wherein the heterocyclic nitrogen is chelated or complexed to a transition metal; and

10 (c) jetting the aqueous ink-jet ink onto the inorganic porous media substrate.

2. A method as in claim 1 wherein the metallized dye comprises a pyridine group bonded to a quinolinol group through an azo bond.

15 3. A method as in claim 2 wherein the metallized dye is in a dicarboxalate form.

20 4. A method as in claim 1 wherein the metallized dye comprises a pyridine group bonded to a naphthalene group through an azo bond.

25 5. A method as in claim 1 wherein the porous media is a paper substrate having coated thereon an inorganic coating selected from the group consisting of silica, alumina, and combinations thereof.

30 6. A method as in claim 1 wherein the inorganic porous media substrate has a pore size ranging from about 5 to 30 nanometers in width.

7. A method as in claim 1 wherein the transition metal is selected from the group consisting of nickel, copper, iron, cobalt, and combinations thereof.

5 8. A method as in claim 1 wherein the metallized dye is present in the aqueous ink-jet ink at from 0.1% to 10% by weight.

9. A method as in claim 1 wherein the metallized 10 dye has a ligand to transition metal molar ratio of 1:1.

10. A method as in claim 1 wherein the metallized dye has a ligand to transition metal molar ratio of 2:1.

15 11. An photo-quality image on a substrate comprising:

(a) a porous media substrate; and

(b) an image on the substrate provided by an aqueous

20 ink-jet ink comprising an ink vehicle, and a metallized dye having a heterocyclic nitrogen and an azo bond wherein the heterocyclic nitrogen is chelated or complexed to a transition metal.

25 12. An image on a substrate as in claim 11 wherein the metallized dye comprises a pyridine group bonded to a quinolinol group through an azo bond.

30 13. An image on a substrate as in claim 12 wherein the metallized dye is in a dicarboxalate form.

14. An image on a substrate as in claim 11 wherein the metallized dye comprises a pyridine group bonded to a naphthalene group through an azo bond.

5 15. An image on a substrate as in claim 11 wherein the porous media substrate is a paper substrate having coated thereon an inorganic coating selected from the group consisting of silica, alumina, and combinations thereof.

10 16. An image on a substrate as in claim 11 wherein the porous media substrate has a pore size ranging from about 5 to 30 nanometers in width.

15 17. An image on a substrate as in claim 11 wherein the transition metal is selected from the group consisting of nickel, copper, iron, cobalt, and combinations thereof.

20 18. An image on a substrate as in claim 11 wherein the metallized dye is present in the aqueous ink-jet ink at from 0.1% to 10% by weight.

25 19. An image on a substrate as in claim 11 wherein the metallized dye has a ligand to transition metal molar ratio of 1:1.

30 20. An image on a substrate as in claim 11 wherein the metallized dye has a ligand to transition metal molar ratio of 2:1.

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